

PART III

Planning by Sea Basin

10

Regulation and Planning in Sea Basins – NE Atlantic

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10.1 Introduction and Geography

The Atlantic Ocean forms the western boundary of the EU and is the second largest of the world's oceans. In an EU context, the Atlantic Basin consists of France, the island of Ireland, Portugal, Spain and, for the immediate future, the UK. Within Britain, the western parts of England and Scotland and all of Wales are included. Additional boundaries occur with the Crown dependencies of Jersey, Guernsey and the Isle of Man. All the Atlantic Basin countries are parties to the UN Law of the Sea Convention and many have large offshore maritime areas. Portugal has one of the largest Economic Exclusive Zones in Europe covering more than 1.7 million km², more than 18 times the country's territorial space (ECORYS *et al.*, 2014). Ireland's EEZ is approximately nine times its land mass (Government of Ireland, 2012). The Mid-Atlantic Ridge, extending from Iceland to approximately 58° South, forms a natural East – West boundary dividing the North Atlantic into two large troughs with depths from 3,700–5,500m (Marine Institute and Marine Board – ESF, 2011). The international waters of the Atlantic Ocean stretch westward to the Americas, eastward to Africa and the Indian Ocean, southward to the Southern Ocean and northward to the Arctic Ocean. Between the EU, cooperation with USA and Canada is common in relation to certain specific areas e.g. Atlantic Ocean Research and ocean observation through Galway Statement on Atlantic Ocean Cooperation (Marine Institute, 2013). All EU countries bordering the Atlantic Ocean have extensive coastlines and large populations reside within the coastal zone, except for those on the open Atlantic seaboard which have fewer than 10 inhabitants per km² in some

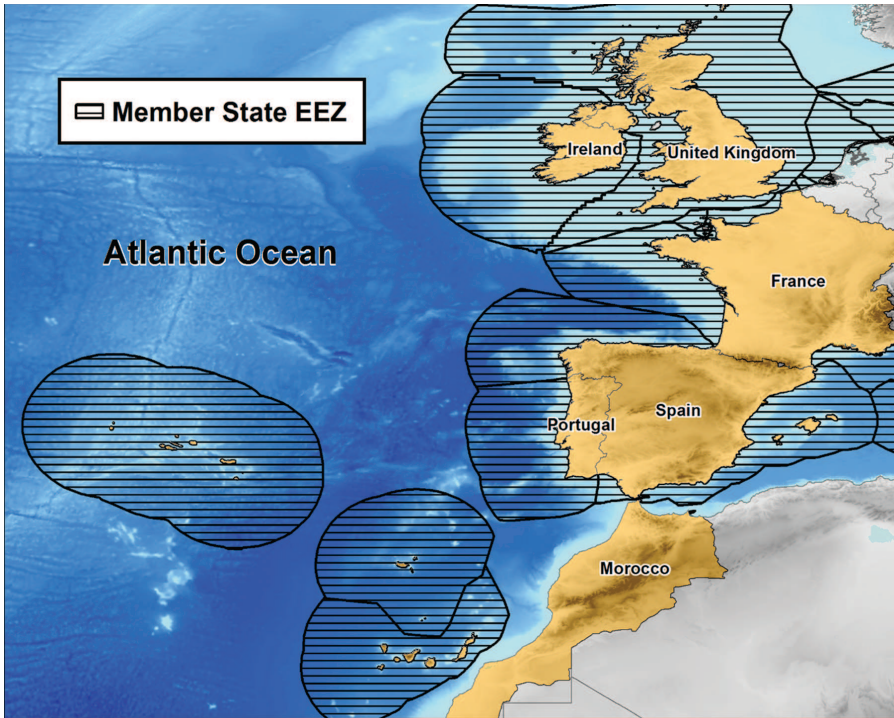


Figure 10.1 The NE Atlantic Basin.

remote areas (Marine Institute and Marine Board – ESF, 2011). Coastal areas vary from indented rocky coastlines, to sandy beaches and sheltered estuarine mudflats.

The North East Atlantic (Figure 10.1) may be one of the richest oceans in the world, but it is also one that is under increasing threat from over-fishing, pollution, abstraction and shipping traffic (EC, 2005). The region is characterised by a wide variety of coastal geologies including small island archipelagos, rocky headlands, cliff formations, salt marshes, sand dunes, bays, estuaries and numerous sandy beaches many of which contain important habitats and species protected under EU nature conservation legislation and site designation. Regional ecology varies widely. Irish and UK waters are categorised as cool-temperate waters with the waters around Atlantic parts of France, Spain and Portugal described as warm-temperate waters (OSPAR, 2010). This means that the Celtic Sea area is at the southern limit of the distribution range for some cold-water species, such as herring and cod, while

some warm-water species, such as sea bass and sardine, come up from the south. Ocean depths vary widely: from being fully oceanic at the shelf break to the west of Ireland, through to the relatively shallow semi-enclosed Irish Sea as well as brackish estuarine systems along the west coast of the UK. Almost all parts of the NE Atlantic area support breeding and migratory birds dependent on the sea. The waters to the south and west of Ireland host a number of cetacean species, including common dolphins and bottlenose dolphins. Further to the west of Ireland, around the 200-mile limit, are a number of designated cold water coral (*Lophelia pertusa*) sites. Cold water coral is also found in Portuguese continental shelf waters to the south.

10.1.1 Overview of Key Marine Sectors

Studies conducted on Blue Growth within the Atlantic Sea Basin indicate that the total size of the Atlantic Blue Economy is at least €26.8 billion in gross value added (GVA) and accounts for more than 800,000 jobs, excluding maritime economic activities that could not be quantified (ECORYS *et al.*, 2014). The OSPAR Quality Status Report (2010) found that changes occurring to coastal and marine ecosystems are largely a function of human intervention. Currently coastal and marine tourism, fishing and shipbuilding, maritime transport and shipping are the most established sectors in the Atlantic basin though their relative importance varies between the individual Member States. In the UK and France, for example, shipbuilding is a much more economically significant activity than it is for Ireland. More than a third of the value of the maritime sector in the NE Atlantic is generated by shipping and coastal tourism (OSPAR, 2010). Shipping and maritime transport was the largest contributor in terms of turnover and value added in 2012 to Ireland's ocean economy (Vega *et al.*, 2015). Marine tourism and leisure is the next largest category overall in the Atlantic sea basin and is the largest contributor in terms of employment. At EU level, coastal tourism represents one of the sectors identified in the Blue Growth agenda and currently represents over one third of the maritime economy. Statistics indicate that more than four out of nine nights spent in accommodation establishments in the EU are spent in coastal areas (EC, 2014). In Ireland, Portugal and Spain tourism is showing an increase in GVA and employment contribution despite the economic crisis, though in the latter two countries this is more pertinent to the Mediterranean basin area (ECORYS *et al.*, 2014). Cruise tourism is one of the fastest growing maritime economic activities in Europe, though the Atlantic area is a less strong destination area than the Baltic or the Mediterranean.

Despite this, cruise tourism in the Atlantic is growing with a number of specific ports promoting their respective areas as a cruise destination. In Ireland, cruise tourism has experienced year on year growth since 1990. The number of ships increased from 61 in 1994 to 229 in 2012 and passenger numbers increased by over 200% (Fáilte Ireland, 2012; Vega et al., 2015).

Fisheries is an important employment sector in Spain, Portugal and France though it contributes more economically (GVA) to Portugal, Ireland and the UK (ECORYS *et al.*, 2014). Spain, the United Kingdom and France are the largest producers in terms of volume in the EU (EU, 2016). Over 74% of the total EU catch in 2013 came from the NE Atlantic (EU, 2016). The fishing fleet is large though it consists primarily of small vessels (under 12m). One of the key challenges identified for fisheries in an EU context and specifically for the NE Atlantic relates to stock sustainability and how reform of the CFP will impact upon this through changes to quotas and Total Allowable Catches (ECORYS *et al.*, 2014). Aquaculture is also showing a steady growth rate in Spain and Portugal, but less so in the other Atlantic basin countries. In the UK, for example, aquaculture activity is limited to the west coast of Scotland. In the EU, overall aquaculture output has been largely constant in volume since 2000 (EC, 2013). In four of the five Atlantic countries, fisheries and coastal tourism are the two largest sectors in terms of employment. Hydrocarbon (oil and gas) exploitation is limited in the Atlantic when compared to other sea-basins (e.g. the North Sea area) with activities currently limited to exploration. Short-sea shipping is out-performing deep-sea shipping in terms of tonnage in the Atlantic. Given the geographic conditions of the Atlantic basin, passenger ferries are important for transportation to and between islands belonging to, for example, Spain (Canary Islands) and Portugal (Azores, Madeira). Generally, there is no convergence in terms of one leading maritime sector in the Atlantic area and according to the Blue Growth study this is likely to stay the same for the immediate future (ECORYS *et al.*, 2014).

The governments of various Atlantic countries, as well as some individual companies, have targeted blue biotechnology as an emerging sector. In Ireland there is an active research community working on biomaterials, bio-processing, food ingredients including functional foods, drugs and other therapeutic products, animal health and agriculture, aquaculture, medical devices, cosmetics and environmental remediation which receives funding from national, EU and international sources (Marine Coordination Group, 2012). Deep-sea mining and exploration activities relating to seabed minerals are under investigation by the UK and France, where exploration contracts have

been signed with the International Seabed Authority. Only one of these pertain to the Atlantic basin in an area beyond national jurisdiction in the Mid-Atlantic Ridge.¹ Research organisations in both Spain and Portugal are also interested in this sector. Marine renewable energy (offshore wind, wave and tidal) has also been identified as a promising future sector for Atlantic seaboard countries (OEE, 2016). Ireland and parts of the UK (Scotland and Northern Ireland) have either dedicated marine renewable energy strategies or national strategies that recognise the potential for development of marine renewable energy in their waters (e.g. DCENR, 2014; Scottish Government, 2017; DETI, 2012). The potential represented is not limited to the physical resource but also the potential in terms of supply chain opportunities, job creation etc. In Wales for example, the sector directly supported 36 FTE jobs and 174 person years of employment in 2015 whereas already in 2017, that has risen to 137 FTE jobs and 350 person years of employment (Marine Energy Wales, 2017).

10.1.2 Most Promising Marine Sectors

A list of the most promising maritime economic activities for Member States in the Atlantic Basin is shown in Table 10.1.

Table 10.1 List of promising maritime economic activities at EU Member State level (ECORYS *et al.*, 2014)

France	Ireland	Portugal	Spain	UK
Ocean Energy	Ocean Energy	Blue Biotechnology	Ocean Energy	Blue Biotechnology
Blue Biotechnology	Blue Biotechnology	Ocean Energy	Blue Biotechnology	Offshore wind
Deep-sea mining	Environmental monitoring	Environmental monitoring	Desalination	Ocean Energy
Ship-building	Offshore wind	Offshore wind	Deep-sea mining	Environmental monitoring
Oil and Gas	Yachting and marinas	Deep-sea mining	Offshore wind	Ship-building
Environmental monitoring	Cruise tourism	Oil and gas	Environmental monitoring	Oil and gas
Maritime surveillance	Coastal protection	Ship-building	Maritime surveillance	Cruise tourism

Note: Cells in colour represent maritime economic activities that are prominent in all countries.

¹See <https://www.isa.org.jm/deep-seabed-minerals-contractors/overview>

Ireland, Spain and parts of the UK appear to have policies and strategies for each maritime sector outlining development objectives for the future. In some cases, these are reflected together in an over-arching marine/oceans policy such as *Harnessing Our Ocean Wealth* in Ireland (Government of Ireland, 2012), *Grenelle de la Mer* [national strategy for the sea] in France (Ministère de l'écologie, de l'énergie, du développement durable et de la mer, 2009) and *Estratégia Nacional para o Mar* [national strategy for the sea] in Portugal (Governo de Portugal, 2012) each of which focus on specific maritime priorities and sectors for that country. The French strategy contains over one hundred commitments sub-divided into four categories covering energy, fisheries, transport and pollution. In Ireland, the national plan seeks to double the value of ocean wealth to 2.4% of GDP by 2030 and increase the turnover from the ocean economy to exceed € 6.4bn by 2020 (Government of Ireland, 2012). The Portuguese strategy highlights governance, living and non-living resources, observation and other activities as the five priority areas (Governo de Portugal, 2012). The UK has a Marine Policy Statement which basically acts as a framework for developing marine plans and for decisions affecting the marine environment but does not contain any national objectives per se (HM Government, 2011). Regional marine plans focus on maritime sectoral activities in English regions. Elsewhere, maritime spatial plans are in the process of being implemented in Scotland (Scottish Government, 2015) or are at the advanced planning phase (DAERA, 2017; Welsh Government, 2015). The Scottish National Marine Plan contains sectoral objectives for a number of marine sectors (fisheries, aquaculture, oil & gas, marine renewables, tourism, shipping, cables etc.) within a wider marine planning context. The draft Welsh marine plan follows a similar format. It is not yet known what approach will be taken in Northern Ireland.

10.1.3 Key Features Affecting Policy

10.1.3.1 EU membership

National maritime policies in the Atlantic are heavily influenced by membership of the European Union. The EU's Integrated Maritime Policy (COM(2007)575) encouraged the development of a dedicated Maritime Strategy for the Atlantic Ocean Area in 2011 (COM(2011)782). This was later supplemented by an Action Plan in 2013 (COM(2013)279) and has resulted in increased cooperation between Atlantic Arc countries through mechanisms such as the Atlantic Forum and Atlantic Stakeholder Platform as well as motivating a renewed focus on marine sectors within the individual Atlantic

countries. The key objective of the Atlantic Action Plan is to identify investment and research priorities in the sea basin that could be considered for EU financial support in the new programming period of 2014–2020. This contains four priorities:

- Promote entrepreneurship and innovation;
- Protect, secure and enhance the marine and coastal environment;
- Improve accessibility and connectivity;
- Create a socially inclusive and sustainable model of regional development.

A progress report on the IMP (COM(2012) 491 final) generally found that through IMP initiatives and Member State actions, many sectors were making progress but that certain sectors needed a more targeted approach hence the adoption of the Blue Growth agenda in 2012. In future, the UK's departure from the EU and the terms it negotiates with the Commission could have wider policy implications for the Atlantic area.

10.1.3.2 Geography and jurisdiction

All the countries surrounding the Atlantic Ocean have claimed EEZs and have conducted substantial seabed mapping programmes which have been instrumental in contributing to knowledge of marine resources. In 2013, as part of an event entitled “The Atlantic – a shared resource”, the Galway Statement on Atlantic Ocean cooperation was signed by representatives from the EU, Canada and the USA. This sought to align the respective ocean observation efforts of all parties so as to promote sustainable management of the Atlantic's resources. Previous efforts at seabed mapping have also been used to inform continental shelf claims. The water depth of the Atlantic sea basin is much deeper than the North Sea and the Baltic and this could limit the development of offshore wind energy in the immediate future. In the longer term however, floating installations may be an option. The Atlantic basin also has opportunities in terms of its position as a gateway for maritime transport which links Europe to other global markets. Its rich natural resources in wind and wave energy could be instrumental in future maritime sector growth.

International maritime boundaries remain to be settled between Ireland, UK, Denmark and Iceland with respect to the Hatton-Rockall area, and the anticipated hydrocarbon resources within that area. A maritime boundary between Ireland and the UK in the Rockall area was settled by international agreement in 1988, though this does not extend into the coast. The Rockall-Hatton area is also claimed by Denmark (on behalf of the Faroe

Islands) and by Iceland. Informal consultations between officials from the four countries concerned had taken place since 2001 but broke down without agreement prior to 2009. Ireland lodged its own submission in 2009 but, as the area is disputed, the Commission on the Limits of the Continental Shelf (CLCS) will not get involved or make any recommendations in relation to the claims received. France, Ireland, Spain and the United Kingdom made a joint submission to CLCS in 2006 in respect of an area to the south of Ireland in the area of the Celtic Sea and the Bay of Biscay. The area concerned is approximately 83,000 km² and was accepted by the CLCS in 2009. Ireland had previously made a separate claim relating to the Porcupine Abyssal Plain in 2005 which was accepted by the CLCS in 2007. Extended continental shelf claims, and the fact that EU Atlantic States have huge maritime jurisdictional zones, raise the relevance of oceans governance for both the States concerned and the EU more generally. In 2009 the Commission published a Communication on ‘Developing the international dimension of the Integrated Maritime Policy of the European Union’ (COM(2009)536); launched a public consultation on international ocean governance in June 2015 (SWD(2016)352 final) and subsequently issued a joint Communication on international ocean governance: an agenda for the future of our oceans in 2016 (JOIN(2016)49 final).

10.1.3.3 Economic and political climate

The countries of the Atlantic basin are politically stable and whilst there have been economic recessions in Ireland, Spain and Portugal it would appear that a new level of economic stability is emerging. Many Atlantic coastal communities are peripheral in nature and are having to cope with declines in traditional maritime sectors such as fisheries and ship-building. Opportunities associated with emerging marine sectors such as ocean energy and offshore aquaculture are viewed as having the potential to address unemployment and declining populations as well as stimulating regional development. The Atlantic is not a source of global insecurity or tension with limited opportunity for conflict. As mature countries, policies tend to be well developed though from the perspective of integrated maritime governance this could be problematic as management has tended to be approached separately rather than cooperatively. Maritime Spatial Planning, for example, is well developed in the UK and Portugal but does not yet exist in Ireland or Spain. The French approach to MSP is highly decentralised.

The EU is in the process of negotiating a trade and investment deal with the USA, the Transatlantic Trade and Investment Partnership (TTIP).

This is said to be the world's biggest bilateral trade and investment deal and will open up the US to EU companies as well as create new rules for exporting, importing and investing overseas. It is thought that an agreement of this nature would stimulate trade and business at a time of ongoing economic crisis, generating growth of businesses and jobs. Economically it is projected that, when fully operational, TTIP could bring benefits to the EU economy worth an additional 0.5% of GDP (Francois *et al.*, 2013). Originally the negotiations were expected to be finalised by the end of 2014 but this did not occur and uncertainty currently reigns over the future of the agreement. Separately the EU is also in the process of negotiating the Comprehensive Economic and Trade Agreement (CETA) with Canada. The European Parliament voted in favour of CETA on 15 February 2017 (but EU national parliaments must approve CETA before it can take full effect). It is intended to have many of the same implications as TTIP; stimulating trade, investment and growth. All EU Atlantic sea basin countries have strong trade links with Canada currently. Canada ranks in the top 20 for all Atlantic countries as the biggest trade partner outside the EU: 5th for UK, 7th for Ireland, 9th for Portugal, 15th for France and 20th for Spain (European Commission, 2017).

10.2 Environmental Policy

10.2.1 Regional Sea Level

The Convention for the Protection of the Marine Environment of the NE Atlantic (OSPAR Convention) applies to the waters of the Atlantic basin which stretch from the Arctic southward to Portugal. All five Atlantic States of the EU are signatories to the OSPAR Convention as is the European Union. The OSPAR area is sub-divided into five areas: Arctic waters; greater North Sea; Celtic Seas; Bay of Biscay and Iberian Coast; and wider Atlantic. The latter three subdivisions incorporate the Atlantic sea basin in the EU sense. The OSPAR Convention has its genesis in addressing dumping and was later expanded to include land-based sources of pollution. In 1998 a new annex on biodiversity and ecosystems was adopted to address non-polluting human activities that can adversely affect the sea. The overall goal of the OSPAR Convention is to conserve marine ecosystems and safeguard human health and, when practicable, restore marine areas that have been adversely affected by preventing and eliminating pollution and by protecting the maritime area against the adverse effects of human activities (Article 2(1)). This is taken forward through a dedicated NE Atlantic Environment Strategy (OSPAR, 2010) supported by five thematic strategies with a Joint Assessment and

Monitoring programme – Biodiversity and Ecosystems; Eutrophication; Hazardous Substances; Offshore Industry; Radioactive Substances. The strategic objective of the biodiversity and ecosystems strategy is to halt and prevent further loss of biodiversity in the OSPAR maritime area; to protect and conserve ecosystems; and to restore, where practicable, marine areas which have been adversely affected by 2020. This, therefore, links directly with the EU's Birds and Habitats Directives, Biodiversity Strategy and the Marine Strategy Framework Directive.

One of the key aims of the OSPAR Convention is the creation of an ecologically coherent network of Marine Protected Areas (MPAs) in the NE Atlantic that is well managed by 2016 (OSPAR Recommendation 2003/3, para.2.1, as amended). The Commission operates an online MPA Map tool² which contains spatial and non-spatial data from OSPAR Contracting Parties on their respective MPAs. Any SPAs and SACs designated under the Birds and Habitats Directives that are partly or wholly in the OSPAR maritime area should also consider reporting that area as a component of the OSPAR Network of Marine Protected Areas (OSPAR Recommendation 2003/3, para.3.3(a), as amended). OSPAR has also agreed to include MPAs in areas of the NE Atlantic that are outside the jurisdiction of the Contracting Parties (ABNJ areas). The majority of MPAs are in territorial waters (23.59%), significantly less in the EEZs (3.06%) and slightly over 6% of MPAs are in areas beyond national jurisdiction (i.e. the High Seas, the Area and the extended continental shelf areas) (OSPAR, 2015). Table 10.2 shows

Table 10.2 Breakdown of OSPAR MPAs in Atlantic sea basin countries (adapted from OSPAR, 2015)

Country	No. of OSPAR MPAs	MPA Coverage (km ²)			
		Territorial Sea	EEZ	ABNJ	TOTAL
France	39	15,821	6,283	n/a	22,104
Ireland	19	1,594	2,542	n/a	4,135
Portugal	8 ³	1,022	4,656	22	5,700
Spain	13	7,277	12,985	n/a	20,262
United Kingdom	244 ⁴	28,239	98,155	17,158	143,522

²See http://mpa.ospar.org/home_ospar

³Portugal has nominated a total of 12 MPAs to OSPAR. Four of these MPAs occur on an extended shelf claim area, submitted to the UN CLCS.

⁴The United Kingdom has nominated a total of 244 MPAs to OSPAR. Two of the 244 MPAs occur on the extended continental shelf of the UK. The North West Rockall Bank SAC straddles the UK EEZ and the extended continental shelf of the UK.

the breakdown of OSPAR MPAs for Atlantic sea basin countries, noting that some parts of these countries fall into other OSPAR subdivisions e.g. part of the UK is within the greater North Sea region. Most of the OSPAR MPAs under national jurisdiction are subject to the management provisions of the Birds and Habitats Directives. In areas beyond national jurisdiction, the OSPAR Commission has already agreed on Recommendations for the management for each of these areas which guide OSPAR Contracting Parties in their actions and in the adoption of measures to achieve the site objectives (OSPAR, 2015). To complement this approach, a “Collective Arrangement between competent international organisations on cooperation and coordination regarding selected areas in areas beyond national jurisdiction in the NE Atlantic” was agreed between the OSPAR Commission and NE Atlantic Fisheries Commission (NEAFC) with respect to fisheries in 2014 (OSPAR Agreement 2014-09).

Under the ‘Human Activities’ work area, the OSPAR Commission works on marine renewable energy, marine litter, underwater noise, mariculture and fishing, shipping, dredging and dumping, and conventional munitions. OSPAR is primarily concerned with the impacts of marine activities on the receiving environment. The OSPAR Commission has developed guidance on environmental considerations for the development of offshore wind farms, the purpose of which is to assist in the identification and consideration of some of the issues associated with determining the environmental effects of offshore wind farm developments (OSPAR, 2008). In relation to fisheries and aquaculture, OSPAR’s Eutrophication; Hazardous Substances; and Biodiversity and Ecosystems strategies all contain measures to monitor, assess and regulate the impacts of mariculture and fisheries. Aside from human activities, OSPAR works on specific anthropogenic issues such as noise, marine litter and ballast water. Whilst none of the OSPAR Commission’s documentation refers explicitly to multi-use platforms or combined activities, its guiding principles and cross-cutting work on topics such as Maritime Spatial Planning, risk assessment and implementation of the Marine Strategy Framework Directive has the potential to influence coexistence of marine activities in future.

10.2.2 EU Level

10.2.2.1 Sea basin strategy

A Maritime Strategy for the Atlantic Ocean Area was produced by the Commission in 2011 (COM(2011)782) as outlined briefly in Section 10.1.3. The Strategy highlighted the need to take an ecosystem approach to the

management of the Atlantic area as well as the activities going on within the area. The Atlantic Action Plan (COM(2013)279) published in 2013 sought to deliver on the areas contained in the strategy. One of the priorities in the Action Plan is to protect, secure and enhance the marine and coastal environment. There are four specific objectives under this priority – improving maritime safety and security; exploring and protecting marine waters and coastal zones; sustainable management of marine resources; and exploitation of the renewable energy potential of the Atlantic area’s marine and coastal environment. Under the specific objective on exploring and protecting marine and coastal areas, the focus is primarily on the creation and development of observation systems and capabilities. The Action Plan also seeks to contribute to the development of tools and strategies to address global climate change issues incorporating assessment of impacts and sharing best practices. The Action Plan complements on-going work under the MSFD to achieve Good Environmental Status (GES) by agreeing on good practices, evaluation processes, encouraging coordination and facilitating integrated monitoring programmes as envisaged under OSPAR. It also seeks to support Member States in their implementation of Integrated Coastal Management and Maritime Spatial Planning. Almost all of these objectives are complementary to other areas of EU activity through existing legislative or policy instruments. In terms of implementation, the Action Plan is not overly specific but outlines possibilities for funding, collaboration and support. Cooperation and implementation of the Action Plan is voluntary. Regular communications on the implementation of the Action Plan are facilitated through annual conferences and the Support Team for the Atlantic Action Plan (See Section 10.5.1).

10.2.2.2 Marine Strategy Framework Directive (MSFD)

At EU level, the Marine Strategy Framework Directive requires Member States to produce marine strategies for their marine waters so that Good Environmental Status can be achieved. In order to achieve its goal, the Directive establishes European marine regions and sub-regions on the basis of geographical and environmental criteria. The NE Atlantic Ocean is one of these regions. All five Atlantic countries have now transposed the requirements of the Directive into national law, assigned their competent authorities, completed their initial assessment, determined what Good Environmental Status (GES) means for their marine waters, identified their environmental targets and associated indicators, submitted their monitoring programmes

and, with the exception of the UK, agreed their programmes of measures.⁵ The Commission's progress report on MSFD implementation states that overall Member States' definition of GES and the path out to achieve it lacks coherence across the EU, even between neighbouring countries within the same marine region (COM(2014)97, p.2). Coherence is, however, identified as being strongest within the NE Atlantic. Cooperation within the OSPAR framework was stronger for the initial assessment and the definition of GES than for the establishment of the environmental targets and indicators (Milieu Ltd., 2014).

10.3 Regulatory Regimes

10.3.1 Overview

All five Atlantic countries are subject to the legal requirements deriving from international conventions and treaties to which they are party or to which the European Union is a party. EU legislation listed in Annex 1 is also applicable in the Atlantic sea basin and to the associated countries.

10.4 Spatial Impact and Planning

10.4.1 Spatial Considerations

In terms of the MARIBE combinations identified for the Atlantic Sea Basin, a number of the combinations will be dependent on specific physical and geographic characteristics in order to be realised. Oil and gas, wind and wave installations are all resource dependent. Generally, the spatial requirements for wave and tidal energy farms are not yet well-established and will depend on the device chosen. Ireland (SEAI, 2010), England (DECC, 2011), Scotland (The Scottish Government, 2007) and Northern Ireland (AECOM and Metoc, 2009) have all conducted Strategic Environmental Assessments for marine renewables generally whilst Spain has conducted a similar exercise specifically for offshore wind (Ministerio de Industria, Energía y Turismo, 2009). This helps to identify potential areas for the development of commercial scale projects. In Portugal, the national Maritime Spatial Plan reflects current ocean energy test sites and it is anticipated that such sites could host

⁵See http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/implementation/scoreboard_en.htm (information dated 27 March 2017, accessed 5 April 2017).

commercial scale deployments in future (O'Hagan, 2016). The UK is the only country with dedicated Renewable Energy Zones and leasing rounds for marine renewable energy (O'Hagan, 2018). France also operates a leasing round type call for projects (tidal and offshore wind) (e.g. Ministère de l'Environnement, de l'Énergie et de la Mer, 2017). Trade association work in Ireland, through the Marine Renewables Industry Association, has previously identified suitable zones for marine renewables in Irish waters but as yet the Irish Government has not conducted leasing rounds for any technology (MRIA, 2010).

Aquaculture planning along the Atlantic basin is approached in a non-systematic way with farmers proposing areas for operation in their licence applications e.g. in Ireland and France (O'Hagan *et al.*, 2017). Scotland implements the approach advocated by the UN FAO involving zoning, site selection and area management (Aguilar-Manjarrez *et al.*, 2017). Zones are designated along the west coast, western isles and northern isles primarily for salmon production but also shellfish (mussel) production. Locally these are subdivided into farm management areas, decided in association with industry representatives, which involves synchronised approaches to fallowing and treatments. This is supplemented with disease management areas for the control of notifiable diseases. Marine Scotland, as the consenting authority, is responsible for strategic aquaculture policy and have published locational guidelines (carrying capacity) for the sector (Marine Scotland Science, 2015). All along the Atlantic coast there is a perceived lack of available sites for expansion of aquaculture which, it is hoped, will be addressed through the recent marine planning system in Scotland. Aquaculture does not take place along English or Welsh coastlines. The EU Directive on Shellfish Waters (2006/113/EC) requires Member States to designate waters that need protection in order to support shellfish life and growth. In France planning of aquaculture installations depends on whether it will be situated in marine waters or inland (FAO, 2017). The main type of mariculture in France is shellfish farming, which represents 80 percent of the total aquaculture production (European Commission/DG MARE, 2017). In Spain the applicable legal framework for aquaculture development is the responsibility of the Autonomous Communities, who apply their own norms for authorisations or leases (MAGRAMA, 2014). This also varies according to whether the aquaculture is inland or marine and in public or private areas. Only Spanish citizens or entities may hold concessions or authorisations for marine cultures under Law No 23/1984. Portugal is the lowest aquaculture

producer in the Atlantic Arc, which can be attributed to a range of factors including a complex licensing process, the small number of optimal sites explored to date, the lack of a dedicated aquaculture zoning system and the situation of existing installations within protected areas where certain new technologies for production may not be permitted (Ministério da Agricultura e do Mar, 2014).

10.4.2 Maritime Spatial Planning

Maritime Spatial Planning can help to create better conditions for proceeding with particular developments since synergies and conflicts between different sectors and other sea uses are usually addressed during development of the plan. An overview of the status of MSP in the different Atlantic sea basin Member States is presented in Table 10.3. This situation will evolve over the coming years as Member States are now required to develop Maritime Spatial Plans at the latest by 2021 under the EU's MSP Directive.

10.5 Related Strategies

10.5.1 Atlantic Strategy

The EC's Communication on Developing a Maritime Strategy for the Atlantic Ocean Area (COM(2011)782) identified five key themes of relevance to the Atlantic sea basin – Implementing the ecosystem approach; Reducing Europe's carbon footprint; Sustainable exploitation of the Atlantic seafloor's natural resources; Responding to threats and emergencies; Socially inclusive growth. Subsequently the EC adopted an Action Plan for a Maritime Strategy in the Atlantic area: delivering smart, sustainable and inclusive growth (COM(2013)279) in 2013 as outlined briefly above. The Action Plan sets out priorities for research and investment to advance the 'blue economy' in the Atlantic area. The Action Plan was developed through consultations conducted in the Atlantic Forum which consisted of representations from each of the five Atlantic Member States, the European Parliament, regional and local authorities, civil society and industry. The Action Plan states that to be effective it needs to be supported by targeted investment, increased research capacity and higher skills. The priority areas identified in the Action Plan are complemented by a range of specific objectives but each of these pertain to specific marine and coastal sectors or

Table 10.3 Information on MSP in Atlantic basin countries

COUNTRY	MSP in		Comments	Links
	Place?	Activities Covered		
France	No	Unknown	National Maritime and Coastal Strategy adopted in February 2017. Legislation transposing MSP Directive enacted in May 2017. Documents Stratégique de Façade, created under the National strategy will be developed for the four French sea basins and will implement both the MSFD and MSP.	http://www.dirm-memn.developpement-durable.gouv.fr/gestion-integree-de-la-mer-et-du-littoral-giml-r266.html https://www.legifrance.gouv.fr/eli/decret/2017/5/3/DEVH1632060D/fo/texte
Ireland	No	Unknown	Ireland has an Integrated Marine Plan called Harnessing Our Ocean Wealth. This recognised the need for MSP and the Marine Coordination Group has produced reports on an appropriate framework for MSP in Ireland which will be taken forward in due course	http://www.ouroceanwealth.ie/ https://www.ouroceanwealth.ie/publications http://www.housing.gov.ie/planning/maritime-spatial-planning/maritime-spatial-planning-directive/maritime-spatial-planning http://www.dgpm.mam.gov.pt/Pages/POEM_PlanoDeOrdenamentoDoEspacoMarinho.aspx
Portugal	Yes	All	All maritime activities were identified, mapped and studied including their conflicts and interaction with local communities	http://www.dgpm.mam.gov.pt/Pages/POEM_PlanoDeOrdenamentoDoEspacoMarinho.aspx
Spain	No	Unknown	MSP could be progressed as part of the implementation of the MSFD according to Spanish law.	<i>None available</i>
UK: England	Yes	All	Marine plans for each marine region	https://www.gov.uk/government/collections/marine-planning-in-england
Wales	No	Unknown	Under development	http://gov.wales/topics/environment/countryside/marineandfisheries/marine/marine-planning/?lang=en
Scotland	Yes	All	National plan with regional plans and sectoral plans	http://www.gov.scot/Topics/marine/seamangement and links to additional resources
N. Ireland	No	Unknown	Under development	https://www.daera-ni.gov.uk/articles/marine-plan-northern-ireland

cross-cutting issues. There is no mention of coexistence or multiple use of space.

The *Support Team for the Atlantic Action Plan* provides guidance and proactive support for public and private organisations, research institutions and universities, institutional and private investors from the Atlantic region who wish to engage in the implementation of the Atlantic Action Plan. The Support Team are represented in each Atlantic Member State by a specific focal point who can provide interested parties with updated information, networking opportunities, funding and project ideas so as to advance the Action Plan priorities. These national points are coordinated by a central office in Brussels. Funding for projects comes through the European Maritime and Fisheries Fund as well as through programmes such as INTERREG Atlantic Area.

INTERREG's Atlantic Area programme forms part of the EU's Cohesion Policy, supporting transnational cooperation projects in 37 regions across the five Atlantic countries, in recognition of the primary features which are common between the regions: environmental heritage and maritime dimension as well as a territorial and urban development common pattern based on a majority of intermediate rural areas and a limited number of large metropolitan areas (INTERREG Atlantic Area, 2015). Projects funded under this programme should contribute to the achievement of economic, social and territorial cohesion in the areas of innovation, resource efficiency, environment and cultural assets, and supporting regional development and sustainable development. The current Programme focuses on four main priorities axes and specific objectives:

- Priority 1: Stimulating innovation and competitiveness;
- Priority 2: Fostering resource efficiency;
- Priority 3: Strengthening the territory's resilience to risks of natural, climate and human origin; and
- Priority 4: Enhancing biodiversity and the natural and cultural assets.

These complement the priorities of the Atlantic Action Plan quite strongly and also the over-arching Europe 2020 strategy for growth.

10.5.2 Existing Maritime Clusters

Clusters are considered important for the progress of the Blue Growth strategy as the development and growth of maritime sectors are often dependent on collaboration and cooperation between local players.

Table 10.4 Maritime Clusters in the Atlantic Sea basin

Country	Region	Cluster	
France	Bretagne	Brest	Defence, blue biotechnology, shipbuilding, fisheries, ocean renewable energy
	Aquitaine	Bordeaux	Yacht building and repair
Ireland	Cork	IMERC	Marine Energy, Shipping, Logistics and Transport; Maritime Safety and Security, Marine Recreation
	Galway	MI	Offshore energy; blue biotechnology, aquaculture; deep sea technologies
Portugal	Norte	Porto	Deep and short-sea shipping; coastal, nautical and cruise tourism; marine minerals mining
	Norte	Aveiro	Industrial fisheries, aquaculture, fish processing; nautical tourism; R&D
	Lisboa	Lisboa	(Industrial) fisheries, marine biotechnology, metallic and non-metallic minerals, freight transport, marine aquaculture, cruise tourism
	Algarve		(Coastal/nautical and cruise) tourism; transshipment; (industrial) fisheries; aquaculture and marine biotechnology
	Azores		Aquaculture, R&D
	Madeira		Tourism, fisheries, R&D
Spain	Galicia	Cluster Marítimo de Malaga	Coastal tourism, Maritime transport (deep and short-sea shipping), Fisheries, Aquaculture, Offshore renewable energy, Shipbuilding
	Basque Country		Shipbuilding, Marine energy, Coastline tourism, Maritime transport (port of Bilbao).
	Canarias	Cluster Marítimo de Canarias	Shipbuilding and ship repairs; port services; fishing and aquaculture; and auxiliary industries
UK	South West England	Dorset and Somerset	Fisheries/Aquaculture, Biotechnology, Renewable Energy, Minerals and Aggregates, Coastal protection, yachting/marinas, Ship/(leisure) boat building
	Scottish West Coast	Highlands and Islands, SW Scotland	Offshore wind, marine aquaculture, fisheries, ocean renewable energy, blue biotech

Source: Country fiches, 2014.

The INTERREG Atlantic Programme states that there is a need to “encourage more clustering and cooperation mechanisms between complementary sectors and between research and economic actors in a transnational context”. The view from INTERREG is that promotion of cooperation

through clustering assists in the transfer of knowledge and technology to industry and also contributes to the “free movement” of knowledge in the Atlantic Area (INTERREG Atlantic Area, 2015).

10.6 Supporting Blue Growth

The Support Team for the Atlantic maintain a list of current funding opportunities covering both national and European sources. The EU funding sources that can be used to fund Blue Growth activities are listed in Table 10.5.

In some circumstances specific sectors may receive governmental support in the form of State-aid but this can be subject to very strict conditions. With respect to shipbuilding for example, the European Commission has created three exemptions for the shipbuilding industry that are considered not to disturb the internal market and competition between companies and countries.

1. Regional aid – if the investment is used for upgrading or modernising existing yards and is not used to restructure the yard financially
2. Innovation aid – for innovation in existing shipbuilding, ship repair or ship conversion yards provided that it relates to the industrial application of innovative products and processes
3. Export credits – ship owners may be granted State-supported credit facilities for new buildings or vessel conversions (EC, 2003).

In 2011, these rules expanded the scope of the current rules to include inland waterway vessels, as well as floating and moving offshore structures and further provided refined rules on innovation aid (EC, 2011). These rules might, therefore, have implications for multi-use platforms in future.

10.7 Key Lessons

10.7.1 Key Messages and Relevant Research Notes

There is a strong law and policy basis for Blue Growth activities at EU level through the Atlantic Action Plan and at national level through Member State strategic plans. One potential problem here is the fact that strategic plans tend to be sectoral in nature making it difficult to reconcile objectives and future development plans. The rural character of the Atlantic area’s coastal regions mean it has strong traditional knowledge of maritime sectors that could now be in decline but those same skillsets could be harnessed

Table 10.5 Possible sources of EU funding for Blue Growth activities

Funding Name	Purpose/Type of Activity Covered	Links
2014–2020 EU financial framework	Partnership contracts between national governments and the Commission, operational programmes for regional development & work programmes for research.	http://ec.europa.eu/budget/mff/index-en.cfm
European Agricultural Fund for Rural Development (EAFRD)	Sustainable management of natural resources and climate action and the balanced territorial development of rural areas.	http://ec.europa.eu/agriculture/rural-development-2014-2020/financial-instruments/index_en.htm
European Maritime and Fisheries Fund (EMFF)	Maritime and fisheries related activities including sea-basins such as the Atlantic. Aims at achieving the objectives of the reformed CFP and IMP.	http://ec.europa.eu/fisheries/cfp/emff/index_en.htm
European Social Fund (ESF)	Main financial instrument for investing in people. Seeks to increase employment opportunities and promote education.	http://ec.europa.eu/regional_policy/en/funding/social-fund/
European Regional Development Fund (ERDF)	Aims to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions.	http://ec.europa.eu/regional_policy/en/funding/erdf/
Cohesion Fund	Helps Member States with a GNI per inhabitant of less than 90% of the EU-27 average to invest in TEN-T transport networks and the environment.	http://ec.europa.eu/regional_policy/en/funding/cohesion-fund/
European Territorial Cooperation Fund	Provides a framework for the exchanges of experience between national, regional and local actors from different Member States as well as joint action to find common solutions to shared problems.	http://ec.europa.eu/regional_policy/en/policy/cooperation/european-territorial/
European Groupings of Territorial Cooperation (EGTCs)	Designed to help specific countries/regions overcome complicated differences between national rules and regulations.	https://portal.cor.europa.eu/egtc/Pages/welcome.aspx
Connecting Europe Facility	A new, integrated instrument for investing in EU infrastructure priorities in transport, energy and telecoms.	https://ec.europa.eu/inea/en/connecting-europe-facility
Programme for the Competitiveness of Enterprises and small and medium-sized enterprises (COSME)	Aims to strengthen the competitiveness and sustainability of the Union's enterprises and encourage an entrepreneurial culture by promoting the creation and growth of SMEs.	http://ec.europa.eu/growth/access-to-finance/cosme-financial-instruments/index_en.htm
Horizon 2020	Research and innovation funding for various types of research project.	http://ec.europa.eu/programmes/horizon2020/
LIFE+	Covers the environment, biodiversity, resource efficiency, governance and all aspects of climate change.	http://ec.europa.eu/environment/life/funding/lifeplus.htm

for the development and implementation of Blue Growth activities. This could be a unique selling point for the region in future. There are already a significant number of maritime clusters along the Atlantic region but it has been recognised that these require stronger local and regional involvement (ECORYS *et al.*, 2012), as well as greater support and recognition at the EU level. Access to finance is important for shipyards and marine equipment suppliers as their investments are capital intensive and uncertain. Similarly, new and developing SMEs also need access to finance as characteristically they do not lend themselves to having the funds necessary for large scale development and deployment e.g. wave and tidal energy developers. Studies conducted by the EC on Blue Growth in the Atlantic sea basin suggests that trends over time are more diverse across the Atlantic Arc (ECORYS *et al.*, 2014). Certain sectors already recognise that lack of suitable maritime space is a key limiting factor for expansion (e.g. aquaculture). Situations such as this, however, have not yet stimulated a move towards combining uses on multi-use platforms. Co-existence may take on a more prominent role or warrant additional consideration at Member State level as States respond to the EU's Maritime Spatial Planning Directive. This can already be seen in the UK where the evidence reports involve stakeholders in deciding if and where specific marine activities can co-exist.

One of the factors that may limit the region's growth in future is the north south gap, clearly evidenced on aspects such as demography, accessibility, higher education, early school leaving, economic development, competitiveness and Innovation regional performance (Innovation Union Scoreboard), share of Natura 2000 sites and capacity to adapt to climate change (INTERREG, 2015). Parts of the Atlantic region are more industrialised than others, hence the region could face challenges with respect to cumulative impacts of marine activities within the context of OSPAR and achieving Good Environmental Status of marine waters by 2020. Many of the Atlantic region countries have huge maritime territories which also present challenges for enforcement, compliance, security and surveillance. Moving closer to shore, where marine activities predominate and where there are already some examples of competition for space, there is still a prevalence of sectoral planning systems over more integrated planning systems at Member State level. Institutional structures also follow this trend with multiple entities often involved in planning, decision-making, implementation, monitoring and decommissioning of marine activities and structures. These realities have the potential to impede development of multi-use platforms. Permissions, authorisation, licences and leases are very much based on single sector activities. This could

make it difficult to licence a platform which would host multiple activities in a shared space. The novelties presented by multiple-use platforms raise many unresolved legal issues such as those relating to liability and insurance, which need to be further explored from a legal perspective.

Given the Atlantic region's geographic position, it could be considered a gateway to continental Europe. There are strong maritime transport links and a captive market for food and energy products which could be derived from increased offshore aquaculture activities as well as the deployment of offshore wind, wave and tidal devices. The latter, however, will require grid integration with continental Europe which also necessitates dedicated funding and high levels of both political and public support. From a policy perspective there appears to be considerable support for Blue Growth and the Atlantic strategy generally from many government actors, industry and wider stakeholder groups. The implications of Brexit are as yet unknown but will more than likely create both opportunities and threats to the region as a whole. In terms of multi-use platforms there are no policies exploring or advocating this approach as a way forward but from this analysis it would seem that there is nothing, in theory, limiting developments of that nature.

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